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**THE BIO-STIMULATORY EFFECT OF ADVANCE PLATELET RICH FIBRIN
COMBINED
WITH LASER ON DENTAL IMPLANT STABILITY: AN EXPERIMENTAL STUDY
ON SHEEP**

Abstract.

Background: Implant stability is the major important requirement for the progress of a dental implant in the bone bed before loading the dental implant without clinical micro motion of the macula. Advance platelet rich fibrin (A-PRF) can be considered a “tissue engineering marvel” due to the typical properties of an osteo promoting matrix that improve the sustained release of growth factors that modulate and support osteoblast proliferation, migration, and adhesion, and at the same time regulates the production of collagen proteins. Low level laser therapy (LLLT) biostimulation increases blood circulation, promotes the revitalization process, reduces the risk of infection, improves metabolic activity, and accelerates the healing of damaged tissues.

Aim of the study: This study aimed to assess the effect of Advance platelet rich fibrin (A- prf) with low level laser therapy biostimulation (LLL Biostimulation) on implant stability.

Materials and Methods: Four healthy male sheep were randomly divided into 2 groups (two in each group). Group 1 (control), at of which ten implants were placed on one side of the tibia and ten dental implants on the other side of the tibia with no additions for a total of 10 implants and Group 2 (study) where ten implants were placed on one side and ten dental implants on the other side of the tibia augmented with Advanced Platelet Rich Fibrin Membrane and LLLT Bio stimulation. Primary and secondary dental implant stability were recorded by radiofrequency evaluation using Osstell device immediately after placement, four and eight weeks postoperatively.

Results: The results of the current study showed no significant difference between control and study group in implant stability at baseline (day of surgery) but after four and eight weeks there was a significant difference between the control group and the study group.

Conclusion: Advance platelet rich fibrin (A- prf) with low level laser therapy biostimulation (LLL Biostimulation) plays a role in new bone formation and enhance implant stability.